DOCUMENT RESUME

ED 285 495 HE 020 729

TITLE	Instructional Improvement Handbook.
INSTITUTION	Wisconsin Univ., Madison. Coll. of Agricultural and Life Sciences.
PUB DATE	May 82
NOTE	79p.; Prepared by the Instructional Improvement Committee. Paper identified by the Task Force on Establishing a National Clearinghouse of Materials Developed for Teaching Assistant (TA) Training.
PUB TYPE	Guides - Classroom Use - Guides (For Teachers) (052) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	Audiovisual Aids; Class Organization; Classroom Techniques; *College Instruction; Course Evaluation; Course Organization; Discussion (Teaching Technique); *Educational Testing; Faculty Evaluation; Grading; Higher Education; Instructional Improvement; Lecture Method; Questionnaires; Sexual Harassment; Student Evaluation; *Student Evaluation of Teacher Performance; *Teaching Assistants; Teaching Guides; *Teaching Methods
IDENTIFIERS	*Teaching Assistant Training Project; *University of Wisconsin Madison

ABSTRACT

Information on teaching at the College of Agricultural and Life Sciences at the University of Wisconsin-Madison is presented for both new and established teachers. Course and lecture organization, presentation techniques, and teaching aids are covered, along with exams, grading, and teacher evaluation. Class size and composition and classroom environment are briefly discussed. The following teaching methods and concerns are addressed: lectures, questions during class, problem-solving lectures, starting and managing group discussions, planning an independent study project, planning laboratory exercises, classroom demonstrations, expert panel discussions and guest speakers, instruction during field trips, student seminars and presentations. Additional topics include: sexual harassment, reliability of tests, objective and subjective tests, oral examinations, administering written tests, fairness and consistency in grading, returning tests, term papers, and teacher and course evaluation. Appended are information on instructional resources on campus, course revisions requiring curriculum committee action, a sample student background questionnaire, and five sample course/instructor evaluation forms. (SW)

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Council of Graduate Deans Clearinghouse -	Chair: Sheila Caskey Southeast Missouri State University
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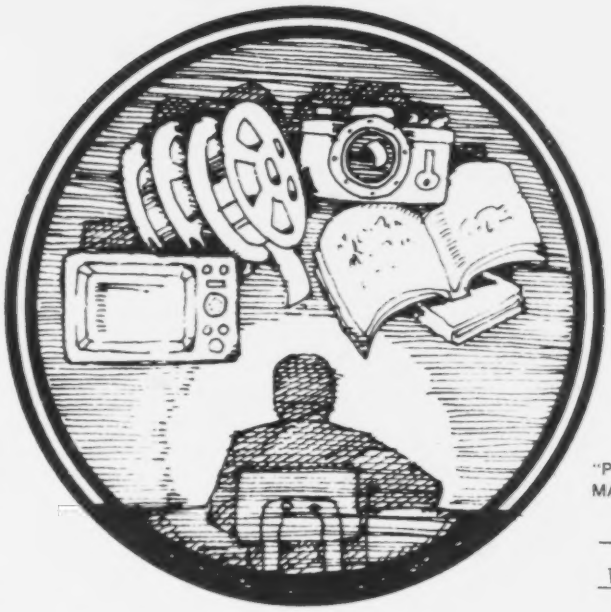
INSTRUCTIONAL IMPROVEMENT HANDBOOK



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Prepared by
Instructional Improvement Committee
College of Agricultural and Life Sciences
University of Wisconsin-Madison

Compliments
of
Committee on Undergraduate Education

AN OPEN LETTER TO THE INSTRUCTIONAL STAFF IN THE COLLEGE OF AGRICULTURAL AND LIFE SCIENCES

Teaching is a vitally important function of our College because it provides our short course and degree students with the expertise they need to develop a rewarding career in their chosen field of work. The future strength of agriculture, natural resources, and life science endeavors in this state depend on college faculty and staff preparing future professionals through our disciplines and through emerging interdisciplinary programs. Some basic questions which many faculty and staff members raise include: How can I improve my teaching? Will I be rewarded for excellence in teaching? Aren't teachers born?

Starting with the last question first: Yes, teachers are born, and so are researchers, BUT NOT IN THE CONTEXT IMPLIED! The real questions which might better be raised include: Can you learn to become an effective researcher if you have the desire and have a good mind? Similarly, can you learn to be a more effective teacher than you are? In both cases, of course you can! If you can learn to improve your skills as a researcher, you too can learn to improve teaching procedures and techniques.

Many professionals hate to admit that they need to improve because it involves elements of self-appraisal or appraisal by someone else, a process that can be a threat to one's ego. To admit to wanting to improve may be regarded by some as an admission of weakness. On the contrary, wishing to improve is a sign of real professional STRENGTH! Some say -- if you just know your subject matter, that's all that counts. Ask ten students at random and you'll find they expect you to know your subject matter, but they also expect professionals to be effective communicators and directors of learning.

Instructional improvement revolves around: (1) ATTITUDE -- motivation, enthusiasm, and recognition of a need, (2) OBJECTIVE -- a goal of doing better, (3) REWARD -- personal satisfaction and professional recognition for having done a good job, (4) PROCESS -- molding, shaping, directing, and being a catalyst, (5) KNOWLEDGE -- a comprehensive understanding of subject matter, and (6) PRODUCT -- developing the desirable attitudes, skills and abilities among those undergraduates, graduates, and short course students who represent the brain power of the future. If you are "down on" the concept of instructional improvement, check to see if you are "up on" many of the suggestions in this handbook prepared by our College's Instructional Improvement Committee.

Finally, we ask you to do two things about this faculty-developed handbook! (a) Study it carefully and implement suggestions which will help you improve your teaching, and (b) offer your own suggestions for its improvement, based on your observations, evaluations, and experiences. In this latter regard, relay your suggestions to the attention of George Sledge, Academic Affairs, 116 Agriculture Hall.

Sincerely yours,

Leo M. Walsh
Dean and Director

George W. Sledge
Associate Dean and Director

PREFACE

Most of the professors responsible for teaching in the College of Agricultural and Life Sciences have probably never had a course(s) in educational methods. Yet, despite a lack of formal instruction in How-To-Teach, these professors apparently do a good job of teaching. It seems that most of us have learned to teach by the mimicry method; we almost instinctively emulate former professors of our own whom we felt did this business of teaching well. We have also learned to teach from the process of teaching. The feedback provided by class evaluations, if taken to heart, can be invaluable for honing teaching skills.

Yet, a professor new to the College of Agricultural and Life Sciences is often a recent Ph.D. with little or no prior teaching experience from which to draw. Observing the classroom performance of his/her own professors may have given good examples of how to deliver effective, well-organized lectures. But it probably didn't shed much light on the mysteries of how to plan and organize an entire course or sequence of lectures, how to write effective examinations, how to initiate and sustain class discussion, etc.. This handbook has been prepared principally for the new professor faced with just such circumstances. It is hoped that it may also be of value to more seasoned professors seeking information on particular aspects of instruction (or just curious about how others may be doing things).

The Instructional Improvement Handbook has taken distinct form in the past year or two. However, the need for a handbook was perceived much earlier. For almost a decade, various committees worked on ideas for such a handbook, and several individuals accumulated materials and did some preliminary writing. We are grateful for their well-laid groundwork which certainly made our task easier. We are also most appreciative of the

encouragement from CALS administration whose ongoing support of the project culminated in the funds necessary to see it to completion.

We wish to stress that effective teaching methods must be evolved by the individual. This requires both motivation and effort. Thanks to the Academic Freedom we all take for granted, no one can tell us how to teach. Conversely, no one else can do it for us either. This handbook has been developed not as a club and not as a crutch. It is our sincere hope that it will be a help.

Instructional Improvement Handbook Committee

B. J. Harrington

J. G. Bockheim

C. Burnett

K. G. Todar

J. C. Wheaton

W. C. Winder

May 1982

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INTRODUCTION

The purpose of this manual is to provide information and ideas for teaching in the College of Agricultural and Life Sciences (CALS) at UW-Madison. This manual is a source book for both new and established teachers.

In serving this purpose, the manual deals with course and lecture organization, teaching style, presentation techniques, teaching aids, exams, grading, and the evaluation of teaching performance.

Course and Lecture Organization

COURSE PLANNING

Thoughtful organization of a course or lecture is absolutely fundamental to the success of either. Lack of organization is one of the most difficult obstacles that students face in college-level courses. An instructor's knowledge and lecturing ability are wasted unless subject matter is covered in a logical sequence and broad course objectives are reinforced during the semester. Specific objectives for each presentation should be stated clearly at the beginning so that students and the instructor will know at the end whether goals have been achieved.

Objectives: things toward which effort is directed. Objectives are for the instructor to decide. In as few words as possible, objectives should describe what students are to know, understand and

perform by the end of the course. An instructor must carefully consider objectives and sometimes make compromises, keeping in mind the constraints of time and space within which the class operates so that objectives are realistic and attainable.

Objectives serve two purposes. They inform the students of the ultimate goals of the course and they assist the instructor in the preparation of the syllabus.

COURSE CONTENT

Syllabus: a summary outline of a discourse, treatise, or course of study. With the objectives clearly written, the means of achieving them must be clearly stated. The following things are usually included in a syllabus.

(1) Topics for the semester.

(2) When the topics will be covered and in what order.

(3) How much time and effort will be devoted to each topic.

(4) Required and/or recommended readings and how they coincide with course topics.

(5) The dates of examinations and project or term paper deadlines.

(6) Grading procedure(s).

The syllabus serves several purposes, including informing the student of the pace and content of the course, which readings to complete and their relative importance, and when to expect exams. The syllabus tells students what to expect in a course.

Although not as obvious to the students, another purpose of the syllabus is to enforce a time schedule on the instructor. Time constraints will force instruction to proceed from point A to point B

in a deliberate fashion, particularly since the students will have a copy of the syllabus and will expect this type of progress. Such a timetable should also discourage the instructor from spending too much time on a topic that is personally interesting but not consistent with outlined course objectives.

POLICY AND STANDARDS

Ground Rules and General Information: Other features also help to improve course organization. They may not be as important as the syllabus for course presentation, but they help the students to understand what is expected of them.

Distribution of a set of GROUND RULES AND GENERAL INFORMATION is very useful. This set should include:

(1) the instructor's name, office location, office hours and telephone number;

(2) the time and location of laboratories, studios and/or discussion sections associated with the course;

(3) required and/or recommended texts for the course;

(4) reserve reading materials and libraries where they are on reserve;

(5) information about exams and quizzes (how many, style, value of each or percentage of grade);

(6) grading procedures and standards. Grading criteria should be spelled out carefully. Students want to know what is expected of them and their grade status throughout the semester;

(7) policy regarding excuses for absences from lectures, laboratories, studios, and exams and for late reports and

projects. Establishment of a firm and fair policy regarding excuses at the beginning of the semester enables fair and uniform treatment of all students.

Running Account of Time Spent: A daily log of time spent on individual topics as the course progresses will prove valuable when modifying the syllabus at some future date. This "running account" will help an instructor in preparation of a revised and realistic syllabus, and highlight problems with overall course organization. Careful composition of course objectives and the syllabus, coupled with close adherence to a timetable, are the principal features of good course organization.

Lecture Organization: Lecture organization is course organization in microcosm. Few instructors, if any, can deliver organized presentations day in and day out without first having carefully considered and outlined those presentations. Students will have a difficult time following a poorly organized lecture and their learning will suffer as a direct result. More material can be presented more effectively if the instructor is prepared and organized.

One way of organizing is to present an outline of the lecture to the students at the beginning of class. This can be done on the chalkboard, with an overhead projector, or with a handout. The outline should be followed faithfully, using repetition and the insertion of examples where appropriate. If there is time at the end of class, it may be useful to briefly summarize the presentation. Also, an instructor may want to summarize the previous presentation at the beginning of the next, since this provides continuity from one session to the next throughout the semester.

METHODS OF INSTRUCTION

While a clear statement of course objectives and organization of course content are central to the planning of a course, it is equally important that careful consideration be given to the method(s) of instruction that will be employed. There are several determinants which govern the choice of a method or the techniques that will be used for a particular class. Often compromises must be made among some of these determining factors to maximize student learning.

Factors Governing the Choice of Method(s) of Instruction

CHOOSING A METHOD

Course Objectives or Type of Learning: The choice of method(s) is dependent on the course objectives or the type of learning which will be emphasized. If the instructor mainly wishes to convey factual information and concepts, lectures may be the most appropriate. However, if the instructor is concerned with developing or changing attitudes and appreciations in students, independent assignments or group discussions may offer better vehicles for this type of learning. If skills are to be developed in students, lectures and group discussions may be largely ineffectual, while demonstration and/or laboratory experience become critical to this kind of instruction.

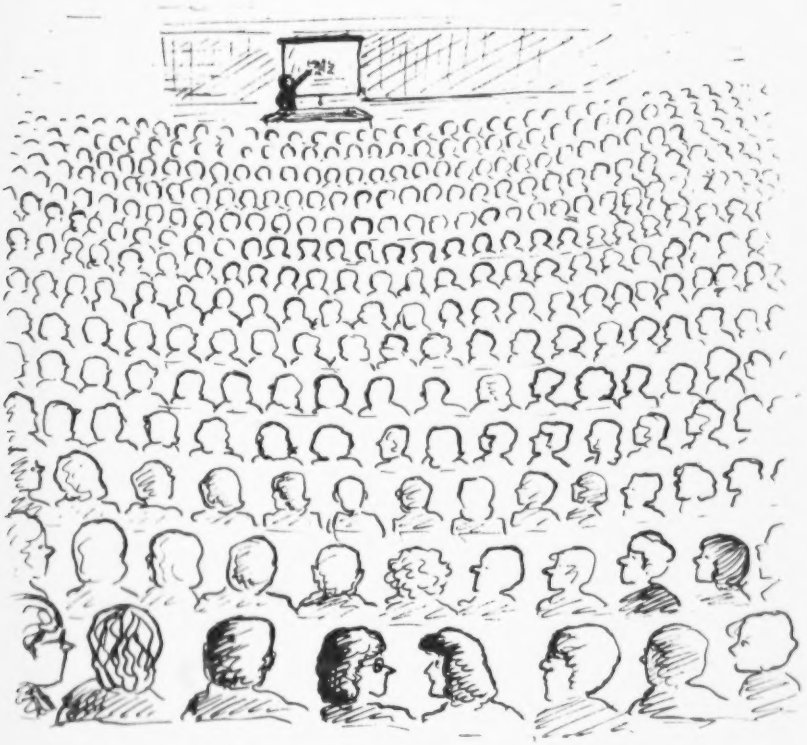
Instructor's Personality and Confidence: The teaching method chosen should be one comfortable for the individual instructor. An animated and dynamic public speaker may feel quite confident about using lectures as the main instructional method. Someone less

comfortable speaking before groups may prefer to invite frequent outside speakers and/or to utilize group discussion as a teaching method. It should be noted, however, that generating good group discussion often requires as much (or more) preparation per class session as does a lecture.

Films, slides, overhead projections and demonstrations can all be excellent teaching aids. They may enhance learning for the students and may help a beginning instructor to gain confidence before a class. Appendix I presents some of the teaching aid resources available at the University of Wisconsin-Madison.

Classroom and Physical Environment: At sometime prior to the start of classes, it is imperative that an instructor visit the classroom (if only to avoid arriving late for the first class meeting after rushing frantically around in the halls trying to find the correct room). Course planning may be markedly influenced by the environment in which the instruction is scheduled to take place. A large auditorium with sloping floors and chairs fixed in place may be fine for a large class that one anticipates teaching primarily through lectures. Yet such an environment wouldn't be very conducive to group discussion. If there is a problem with the assigned classroom, instructors should contact the Instructional Space Office (262-6345).

This preliminary classroom visit is also an excellent time to check that any audiovisual aids that are planned will function effectively in the particular classroom and to decide if the use of a microphone might be advisable. For large classrooms neck microphones



"Now look closely at this very important detail."

usually are available. They can be adapted to very quickly, and often make the difference between "reaching" students who sit in the back of the room or not being heard by that portion of the class.

Many modern classrooms have been built without windows to cut down on distraction. Unfortunately, windowless classrooms may also cut down on available oxygen for the students. Poor ventilation, rather than boredom, may account for the students seen nodding and napping. Opening doors or even leading a brief stretch-breathe-deeply-and-walk-about break in the middle of a literally stuffy class can be very important. Classrooms too warm, too cool or too poorly ventilated are unsatisfactory environments for learning.

CLASS SIZE

Number of Students: At many universities preregistration procedures give an instructor a general enrollment figure that can be

very helpful in class planning and ordering textbooks, laboratory materials, etc.. At the University of Wisconsin-Madison instructors often do not know how many students to expect until they walk into the first class meeting. It can be rather unsettling to discover that a course planned as a small seminar or discussion group has 60 students in it. Limiting enrollment or requiring assignment committee permission during registration are means of getting a preliminary indication of class size. This latter procedure gives a few days' advance warning of enrollment but is often used only for introductory and/or laboratory courses. If faced suddenly with a class size unlike that planned for, an instructor may need to reevaluate the chosen method(s) of instruction.

A small class allows the greatest degree of flexibility in teaching methods. Lectures, seminars, discussion groups and demonstrations are all effective methods for a small class, and several different methods can be utilized to vary the learning experience for small groups of students. For large classes the formal lecture may be the only practical method of instruction.

CLASS COMPOSITION

Student Background: While student numbers may influence or determine method of instruction, effective teaching may depend even more on knowledge of the background with which students enter a course. A course with fixed prerequisites affords some assurance that students will have been exposed to subject matter important as background for the present course. Yet, prerequisites only require that students have taken a prescribed course or courses. They do not ensure that students will have done well in those background courses

or that the hoped for transfer of learning will be brought to bear in the course being planned.

Often the general, overall, background experience of students will have more bearing on choice of method or teaching technique than whether or not they have taken a specific prerequisite. University of Wisconsin-Madison courses with 300-699 numbers are open to upperclass, undergraduate students as well as to graduate students, and, thus, enrollment in a particular course may be dominated by one level of students and may vary from year to year. Often the greater academic maturity of graduate students will suggest more use of independent study projects and/or discussion for a class.

BACKGROUND QUESTIONNAIRES

Many instructors find the use of a student questionnaire at the onset of a course very useful for learning about student backgrounds. Such questionnaires can be short, asking only name, address, year in school and undergraduate major. They may be expanded for information such as a list of relevant background courses taken, whether the student comes from a farm background, why a student is enrolled in the course and what he or she hopes to gain from taking the class.

The latter type of question allows the instructor to check how well student objectives match his(her) own objectives for the course. An instructor need never alter course objectives just to please a particular class. However, it is well to be aware that, if student and instructor objectives for the course differ extremely, it will be very important for the instructor to present course objectives persuasively and explain their importance and relevance well at the onset of the course. It is also advisable to review the

catalogue description of the course; if student objectives differ markedly from those of the instructor, the course description may require updating or rewriting. Any substantial change(s) must be approved by the CALS Curriculum Committee and the appropriate Divisional Committee (See Appendix II for information on course revisions requiring Curriculum Committee action).

An example of a student questionnaire which could be used at the beginning of a course is presented in Appendix III. Instructors should hand-tailor questionnaires to gain information on those aspects of student background that are most imporant to the particular courses being planned.

Methods or Approaches to Instruction

The Socratic dialogue is typically thought of as the ideal method of instruction. Unfortunately, the exigencies of university teaching sometimes lead us far from the give and take of this one-on-one instructional ideal. Yet, if care is taken, each of the methods discussed in the following pages can be approached with that ideal in mind and thus infused with some of the character of a dialogue.

THE LECTURE TECHNIQUE

Lectures: The usual image conjured up of college-level or university teaching is that of a professor delivering a 50 minute lecture before a class. This method of instruction is so typical of university classes that sometimes alternative methods aren't even considered. However, especially for classes with high enrollments, the lecture may be the only practical teaching approach.

Various comparative studies have demonstrated that, in general, the lecture is a good method for presenting factual information, theories, and concepts but that other methods of teaching may be more effective than lecturing in effecting attitudinal changes in students and in developing problem-solving skills. In comparisons of lectures with discussions, students taught by the lecture method demonstrated higher achievement on factual and immediate recall tests but did not do as well on comprehension and delayed recall tests. In addition, discussion classes were found to motivate more students to take subsequent courses in a subject area than did classes taught by lectures.

QUESTIONS DURING CLASS

While discussion methods actively involve students in the learning process, lectures present a basically passive learning experience with a considerably lower level of feedback for the students concerning how they are learning. Tests and examinations provide feedback, but they are often removed in time from the learning experience. An instructor who encourages the class to raise questions during lecture or in a reserved time period toward the end of class adds feedback opportunity to the lecture method. The time during which questions from the class should be allowed is a matter of personal preference. If an instructor finds questions that interrupt the flow of a lecture to be disconcerting, the option of requesting that students hold their questions until the end of the period should be exercised. An instructor who makes a practice of asking questions of students immediately involves them in the learning process and helps to vary the pace of the lecture.

"As I've stressed, good organization is of vital importance!"

ORGANIZATION OF LECTURES

Good organization is critical for the lecture method of instruction to be effective, and the same techniques already discussed with regard to course organization apply to lectures. Statement of objectives and outlining of material to be covered, with particular attention given to order of presentation, help to structure a lecture. Several studies have shown that students learning well-organized, meaningfully associated information scored higher on retention and application of information than did students exposed to rote memorization of randomly associated or poorly connected facts. During a lecture, particular care must be given by

the instructor to good transition from one topic to the next. Helping students to see the relationships between seemingly separate topics or at the very least announcing "That's all I have to say about A. Now let's consider B." will deter the student complaint of "It usually takes me 10 minutes to realize we've moved on to a new topic."

Techniques that help with organization include outlining the lecture on the chalkboard or overhead projector either at the beginning of or during the class. While it might seem simpler just to hand out copies of lecture outlines, this is not a recommended approach. Studies have shown that students pay more attention to and glean more information from an outline if they copy it themselves. A brief recapping or summary at the end of a lecture also helps to impart organization. Since a lecture is not student-paced or learner-controlled, the attention of students may wander and points mentioned only once may be missed by some members of the class. Thus, the old adage of "Tell them what you're going to tell them; tell them; and then tell them what you've just told them." is probably very sound advice for how to use the lecture method of instruction effectively.

PROBLEM-SOLVING LECTURES

Another approach that some instructors use for preparing a good lecture is to plan it around a problem. The problem is introduced in the beginning of the lecture and then examples are presented and evidence is built to allow students to reach the solution themselves as the lecture progresses. Ultimately, the instructor draws things to a conclusion by pointing out the solution for those students who have failed to reach it themselves. Such problem-solving lectures

involve the students more during a class, probably hold their attention better, and more closely approximate the active learning experience that is offered by group discussion methods.

LECTURE PRESENTATION

Style and delivery can be as important to the success of a lecture as good planning and organization, and several factors influence these aspects of a presentation. Possibly most important is the instructor's enthusiasm for the subject and for teaching. While it is probably impossible to fake enthusiasm, an instructor can work at improving communication of the excitment and importance that a subject has to offer. Vocal variety enhances a lecture. No matter how exciting a subject is, it won't seem so to most students if it's presented in a monotone. Often tape recording ones own lectures can help an instructor work on this aspect of lecture delivery. Placing the tape recorder in the back of the room will also give information on how well one's voice is carrying. A few students who sit in the back of the room can be asked to signal the instructor when they can't hear. If a problem persists, use of a microphone may be advisable.

NON-VERBAL COMMUNICATION

An instructor's gaze as well as voice should reach students during a lecture. Eye contact maintains a sense of interaction between a speaker and the audience and is important to sustaining attention and interest. Looking at the students also allows an instructor to be more responsive to feedback from the class. A variety of student cues, from bewildered looks to frantic scribbling, can help an instructor adjust the pace of a lecture and know which points to repeat, rephrase, or illustrate with another example. An instructor's movements and gestures are useful for emphasis but should not be allowed to become distracting mannerisms.

Group Discussions: In the preceding section on the lecture method of instruction, it was suggested that group discussion is an excellent, active-learning method for changing student attitudes and appreciations as well as for encouraging problem-solving activity and clarifying difficult concepts. Research has also shown that students taught by the discussion method show greater motivation to further study and to taking of additional courses in a particular subject area than do students exposed only to lectures.

LIMITATIONS OF THE DISCUSSION METHOD

However, the discussion method does have certain drawbacks and limitations. It is limited by student numbers, as it is not a very effective or manageable method for large classes. It is also a very slow-paced approach to instruction. Hence, it is not recommended for transmitting factual information, since the lecture excels as a method for this instructional task.

The use of ad hoc, impromptu discussion instead of a lecture, to disguise inadequate lecture preparation, is a risky practice and should be avoided. On the other hand, instructors must avoid the

temptation to turn a discussion into a mini-lecture or to offer answers or solutions that force discussion to follow confined steps to reach some predetermined goal or solution. If discussion has been chosen as a teaching method so that students can learn to integrate and apply information in problem-solving, then it is the students who must be given the opportunity to practice hypothesis formulation and critical thinking. Effective leading of a discussion requires patience as well as skill on the part of the instructor.

It is possible for instructors to mix different instructional methods deliberately and well during the course of a semester. In fact, a mixture of methods often allows the best coverage of different learning levels or tasks, and some studies have shown that students prefer courses which combine lecture and discussion for instruction to courses which rely solely on one teaching method.

INITIATING DISCUSSIONS

One of the greatest stumbling blocks to discussion is getting started. While students may be reticent to reveal ignorance to an instructor, they may be even more inhibited about speaking up in front of their classmates, many of whom are strangers at the beginning of a course. If the course is to be taught largely by discussion, it is often very helpful to use a simple, ice-breaking techique like the following: Break the class into pairs and allow about 5-10 minutes for paired exchange of brief biographical material, including what brings these individuals to the present course. After this exchange period, have each member of the class introduce his(her) partner to the whole group by relaying interesting bits of information they've just learned about that individual.

Encourage all members to be relaxed and informal about the process. A circular seating pattern is most conducive to discussion if it can be arranged.

For any subsequent discussion period the instructor should be responsible for introducing the topic and initiating discussion. Often the topic may already have been given to the students as part of a homework or reading assignment. One easy way to initiate discussion is with a question. However, care should be taken to ask questions that require interpretive rather than factual answers, and the class should be encouraged to keep bringing more information to bear, with an emphasis on examination and appreciation of the problem, rather than rushing too quickly toward a solution. Prompt agreement among discussants will kill discussion quickly.

MANAGING DISCUSSIONS

A certain degree of controversy is desirable if not essential to sustained discussion, but controversy must be managed well if it is to be productive and not end in hostility or hurt feelings. One good method for managing controversy is to list arguments in two (pro and con) columns on the chalkboard as they are put forth. This procedure helps keep participants from repeating the same arguments and soon lets students begin to see that they may be dealing with shades of grey or relative values instead of the black and white of "good" vs "bad". Those students who show tendencies to monopolize discussion must be led to to understand that cooperative rather than competitive effort is being sought by this teaching method and that group as well as individual effort will be rewarded.

In addition to introducing the topic and initiating and sustaining discussion, the instructor should be responsible for

clarifying goals during the discussion, getting it back on the track when necessary and summarizing results at the end of the discussion. If a discussion is not progressing, it may be that different students are trying to work on different aspects of the problem at the same time and becoming frustrated by what they consider to be irrelevant comments being offered by others. A good technique for avoiding such difficulties and helping to make discussion more effective is to break the problem up into subproblems and have the class work on these subproblems in succession. Steps such as the following form a natural sequence for most discussions:

KEEPING DISCUSSIONS ON TRACK

(1) Clarification of problem; formulation of hypothesis(es).

(2) Suggesting relevant data or information.

(3) Discussion of characteristics of an acceptable solution.

(4) Offering possible solutions.

(5) Evaluating solutions in light of criteria of #3.

During the course of discussion, listening skills can be encouraged by asking each student to repeat or paraphrase what the previous member said before responsing to it.

The instructor should be responsible for summarizing results at the conclusion of each discussion period. Alternatively, the instructor may wish to develop the student's skills of evaluation by reserving the last interval of time for a class summary reviewing the discussion's effectiveness in light of the goals or objectives for that period.

Independent Study, Honors Research, etc.: Independent study courses shift much of the instructional task and responsibility for learning to the student. They do not, however, absolve the

instructor from course planning. On the contrary, since each independent study course is unique, it will probably require more planning that an ordinary course offering which has been taught before and which needs only updating and refining.

One good way to plan an independent study course is to ask the student who has requested an opportunity for independent study to write a short outline or proposal stating some goals. This activity is preliminary to the study itself and preferably should be done prior to registration and the decision of the number of course credits that will be earned. The student's proposal should include the objectives of the project, the approaches that will be taken to carry out the learning, and the means of demonstrating that the learning has taken place (periodic reports on segments of the project, a terminal seminar, paper or demonstration, etc.). The student and instructor should discuss this proposal at length, with the instructor suggesting resources and approaches that might be appropriate for the study. Making sure that both student and instructor understand and agree on course objectives and how they will be met is important to planning an effective independent study course. In the beginning, a schedule should be set for times when student and instructor will meet to discuss the student's progress and problems as the course proceeds, and this schedule should be held to as closely as possible during the semester.

Laboratory Experience: If a course includes a laboratory, that laboratory should be planned carefully to make it an integral and useful part of the course instead of just a loosely related time-

filler. If the relevance of the laboratory exercises is not readily apparent to students, the instructor should explain the importance of this course component to them. When possible, laboratory coverage of topics should closely parallel the lecture, as learning is best reinforced in this manner. Yet, there may be times when the semester's laboratory work may entail its own discrete objectives which contribute to the overall course objectives in a manner relatively independent of lecture. When lecture and laboratory are thus being used for very different teaching tasks and objectives within the framework of a single course, students should be made aware of this plan so they do not become bewildered or frustrated by the lack of parallelism between the two course components.

LABORATORY PLANNING

Planning a full semester of laboratory work for a course is a very serious, and often time-consuming, task. Equipment, materials and supplies must all be arranged for or ordered. As budgets tighten, an instructor must plan in advance and be sure there will be adequate funds to purchase everything required for the laboratory work. It may be necessary to revise or eliminate some of the exercises.

LABORATORY PREPARATION

Each individual laboratory period during the course of the semester will require further preparation on the part of the instructor. If experiments are planned, the instructor should be sure to perform them in advance with the materials on hand to feel relatively secure that things will operate smoothly for the students. Planning the use of living specimens for a laboratory exercise can require especially careful timing to ensure that ordered materials arrive when needed and in useable condition. All materials

necessary for a given laboratory should be on hand at the start of the period. The instructions given to the class should be thorough and explicit enough for students to proceed with the work. Throughout the laboratory period, the instructor should be in attendance and available to offer help with problems that arise and to ask and answer questions. If a student assistant will be helping with the laboratory instruction, the course instructor must conscientiously supervise that individual, since, ultimately, the responsibility for ensuring that the laboratory is an effective learning experience for students rests with the course instructor.

Demonstrations: Sometimes instruction concerning a process or technique can be presented more effectively by a demonstration than by words or description. Demonstrating is also an excellent means of varying the pace of a lecture and of maintaining student interest. In laboratoray instruction an instructor may wish to substitute a single demonstration involving costly equipment or supplies for a laboratory exercise done independently by students or by groups of students.

Preparation for a demonstration should include at least one rehearsal to make sure it will function smoothly and that students will be able to see and hear adequately. Closed circuit TV screens can help make a demonstration accessible to large groups of students.

Problem-solving Sessions: For courses which involve the development or sharpening of problem-solving skills as a major learning task, scheduling of sessions in which students may practice

these skills and receive immediate help and feedback on their efforts is essential. Biometry, Chemistry, Genetics and other subject areas traditionally have relied heavily on the use of problem-solving sessions as a teaching method. Often such sessions are handled very well by graduate students assisting with the course. As with laboratory instruction, however, the course instructor remains respnsible for planning and coordination of problem-solving sessions and for seeing that they are implemented in a way which contributes to realizing the course objectives.

Expert Panel Discussions and Guest Speakers: Outside speakers, singly or as a panel, serve to diversify and enliven lecture courses. The specialized expertise of these speakers often brings current ideas and research to a class. Careful syllabus planning and

GUEST LECTURES

scheduling will allow the use of such outside speakers at times when it may be necessary for the instructor to be absent from the campus. Guest speakers should be chosen who will make a contribution relevant to the subject being studied and stay within the framework of the course objectives in their choice of subject. The instructor can also ask a guest to cover a specific topic instead of leaving the subject to the invited speaker.

INSTRUCTION OUTSIDE OF THE CLASSROOM

Field Trips: Field trips place students in a specific site or environment where they will be exposed to a learning experience that can't be provided by descriptive lectures, demonstrations, or laboratory exercises. The nature of the field trip is unique to the course being taught and can range from a visit to a cheese factory or other industrial site to a collecting trip for soils or insects. Because they take time and careful coordination, field trips should not be planned unless they are truly important to the course objectives.

Transportation must be arranged for required field trips, and the instructor must bear the responsibility for the safety and supervision of students while away from the campus. University regulations must be observed if State vehicles are used. Financial support for required field trips is generally available but must be requested prior to the beginning of the semester through the office of Associate Dean and Director, G.W. Sledge, Academic Affairs (262-3003).

As is the case with laboratory exercises, field trips also require careful marshaling of supplies and materials. The instructor must also make sure that times and places for the class to meet have been made clear to all members. On a cautionary note, it may be wise to visit the site(s) of the field trip close to the date planned for the trip and to verify that any necessary on-site arrangements have been made. It can be very embarrassing to plan a trip to collect aquatic insects and travel only to find that the destination pond has dried up since the instructor last visitied it!

STUDENTS AS TEACHERS

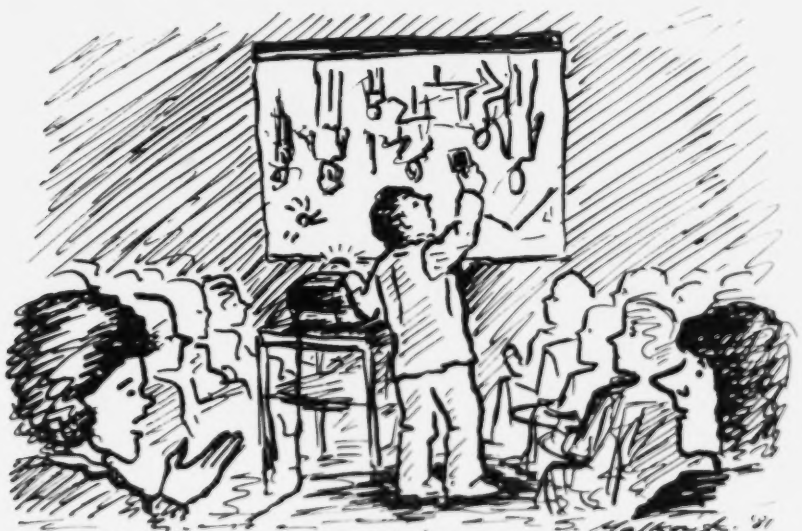
Student Presentations/Seminars: Seminars presented by students during class periods are time consuming. Hence, they probably should be utilized as a teaching method only when the course objectives actually include enhancing the students' organizational and public speaking skills. Assignment or choice of seminar topics should be made at the beginning of the semester to ensure that each student presentation will be a relevant contribution to the course content as a whole. The breadth of student seminars, which may range from critical review of a single journal article to a detailed synthesis drawn from careful research of a variety of sources, will depend on such factors as the level of the course and the number of students enrolled.

Teaching Aids

AUDIOVISUAL AIDS

Chalk and a chalkboard are extremely effective teaching aids and should not be discredited simply becase they are so commonplace. Lists, outlines, proper spelling of terms, illustrations, etc. can all be placed on the board very smoothly as a lecture or discussion proceeds, without the disruption of turning lights on and off.

Transparencies or slides, films and overhead projections are also frequently used to illustrate and enliven lectures. Most departments have their own equipment for the use of such teaching aids. In addition, there are a variety of facilities and resources available on the UW-Madison campus (these instructional improvement resources are listed with relevant access information in Appendix I). To avoid frustration and/or embarrassment, an instructor should generally rehearse the use of any teaching aids that are planned for a class in advance of their presentation.



"This'll be back on in a minute - just sit tight."

Sexual Harassment

While careful attention to course planning and method(s) of instruction are essential to effective teaching, concern must also be shown for students' sensibilities. No student should be harassed, intimidated, or made to feel uncomfortable, either inadvertently or otherwise, in an instructional setting. Indeed, instructors found to have engaged in such harassment of students are subject to disciplinary action as set forth in a Policy Statement recently adopted by UW-Madison (See Appendix IV).

EXAMINATIONS

Purposes of Examinations

WHY GIVE EXAMINATIONS?

Examinations are part of teaching. An examination or any testing procedure is a quantitative observation of learning. Teachers are obliged to make such observations of their students. The principal objectives of examinations are: (1) to evaluate the level of each student's achievement on a scale relative to that of his classmates, predecessors, or other standard and (2) to evaluate the effectiveness of the instructor's teaching. Secondarily examinations can be used as motivational devices for learning and as instruments of teaching. All of these factors should be considered in the preparation, administration and interpretation of an examination.

Properties of a Good Examination

One of the most important properties of an examination is that it measures what it is supposed to measure. As a tool for assessment of student knowledge it is designed to measure learning according to the instructor's goals and educational objectives. Both the student and the instructor should clearly understand and review the objectives of the course in preparation for an examination. Learning (educational) objectives are commonly placed in hierarchical order in six categories which also represent corresponding levels of testing:

LEVELS OF TESTING

1) Knowledge of facts, concepts, theories, principles, rules, terminologies, patterns, methodologies, generalizations.

2) Comprehension of presented material and translation into meaningful form together with its interpretation and extrapolation.

3) Application of the principles and concepts to solve problems.

4) Analysis of components of presented material together with recognition of their relationship and organization.

5) Synthesis of the elements and components to form a whole, so as to produce a new communication or a plan for investigation.

6) Evaluation which involves qualitative and quantitative judgments about the value of the material.

Within this hierarchical system it is assumed that a student learns by utilizing and building upon preceding learning levels. The lowest level of learning is Knowledge which is characterized by recall of specifics, methods, processes or patterns. The highest level, Evaluation, is defined as qualitative and quantitative judgements about the value of material and methods and the extent to which they satisfy certain criteria.

Level 1 learning and testing involves almost exclusively memory practices. Level 2 begins to require integration of the facts and principles (objective examinations are appropriate for testing). Learning or testing at Levels 3, 4, 5, and 6 involves decision making, creativity, choice and problem solving and becomes increasingly more suitable to essay style tests. Reliable examinations can be given at any level. The important point here is that whatever the level of learning and testing employed, it should be within the range of what the instructor and the students perceive as the course objectives.

RELIABILITY OF EXAMINATIONS

A necessary condition for an examination is that is be reliable in its measurement of whatever it is intended to measure. This depends partly on test length and spread of the scores. More importantly, a test is reliable if its results compare favorably with those obtained by other methods (e.g. lab reports, lab practicals, term papers, oral reports, etc.) evaluating student mastery of the same content.

The ideal examination should measure learning against a minimum of outside influences such as writing style, emotional stress, cultural background, perception of apparent patterns to answers or misinformation. There are many variables involved in the examination process including the instructor, the students, the particular examination and the grader. The ideal examination would minimize all variables except the student's course-related knowledge and the ability to use that knowledge. To diminish the influence of irrelevant variables, it is desirable that several examinations be given throughout a course.

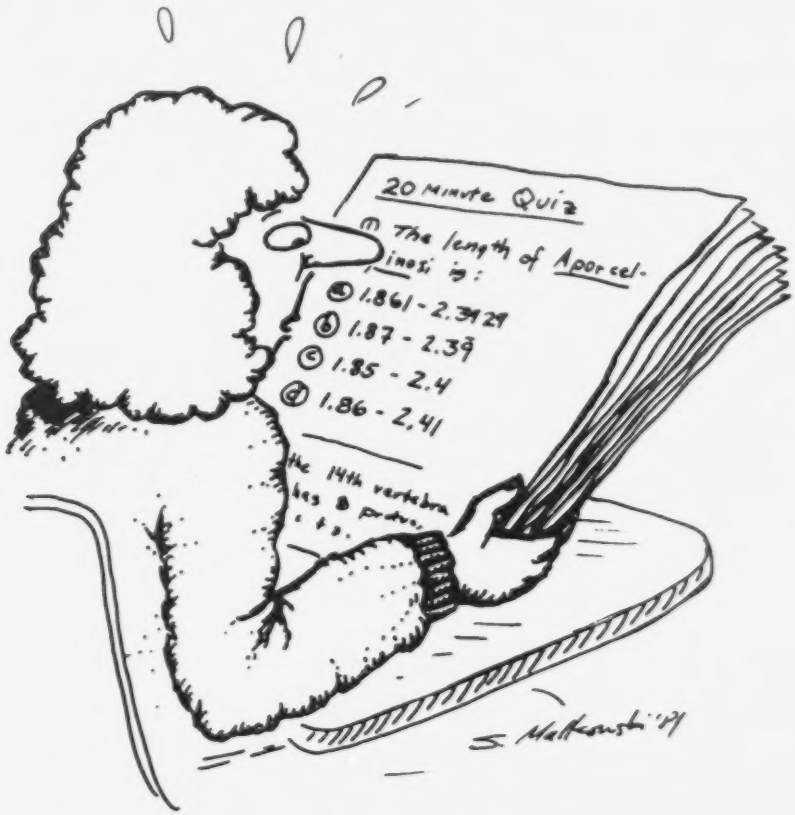
An instructor should devote enough time and thought to the preparation of an examination so that it meets the learning objectives and gives reliable results. An examination can never cover all eligible material. The instructor makes the examination a teaching aid by selecting the important points for examination and focusing student attention on them. The examination is also a learning aid for the student as it stimulates study and review and synthesis of the material.

Types of Examinations

The instructor must decide on the type of examination which will effectively measure learning. Examinations may be written, oral or practical, open-book or closed-book, in class or take-home, and objective or subjective. The student must be informed at the beginning of the term as to the policies, procedure, types of examinations to expect, grading, etc.

CHOICE OF EXAMINATION FORMAT

Class size (number of students to be tested) is a factor which may influence the choice of examination style. Whatever style the instructor uses, the questions should be clear and unambiguously stated. The length of the examination must be carefully considered and must be consistent with the length of time allowed for the



test. In order to discriminate among students by their subject matter knowledge and rather than time of performance, hourly exams at the college level generally should be designed so that all items can be answered by the majority of the students in the time allotted. If an examination is deliberately designed so that the majority of the students cannot complete the exam during the time allotted, the students should be so advised to avoid confusion and frustration.

OBJECTIVE OR SUBJECTIVE EXAMINATIONS?

Written Examinations can follow a subjective format, an objective format, or a mixture of the styles. "Subjective" examinations require a written response which can be one sentence or many pages in length. "Objective" examinations are constructed so that a single word or letter can be scored as the correct response. There are advantages and problems inherent in the use of either format that will be discussed below.

THE OBJECTIVE EXAMINATION

Objective Tests: Types of objective tests include true/false tests, matching, fill-in-the-blank and multiple choice (a question or statement followed by three to five answers from which to choose) or mixtures of these styles. The term "objective" refers to the scoring procedure rather than the response. Each item is constucted so that a single word or letter can be scored. Objective examinations have advantages in range of contents, reduced scoring time, scoring anonymity and reliability. Questions can be easily formulated over a range of "lower learning levels" (knowledge, comprehension, application) but are more difficult to develop when testing the "higher learning skills" (analysis, synthesis, evaluation).

Writing an objective examination such as a multiple choice test requires considerable time. Forty or fifty questions, each with three to five answers can require the instructor to develop approximately 150 possible answers. Designing questions which match educational objectives is difficult. Some instructors find it easiest to write a few questions while working on a lecture or immediately following a lecture or laboratory. Proper wording of the questions should be done with great care. Equal care must be taken in the formulation of answers which must be clear and unambiguous. The instructor must know the material thoroughly in order to write an unambigious question and to be able to support the correct response when challenged by students.

THE SUBJECTIVE EXAMINATION

Subjective Tests are represented by the essay exam which requires written responses to questions or solutions to problems. The basic features of the subjective examination are: (1) a relatively small number of questions; (2) the students organize and express the answer in their words; and (3) the answers vary in completeness and tend to be neither completely right nor completely wrong. Ironically it is the possible variability within these features which is argued to be both the strength and the weakness of essay examinations.

In general, subjective examinations require much less time to prepare because the number of questions that can be posed and answered in essay form is highly restricted by time. However, if too few questions are asked the success or failure of a student tends more to be a function of chance than of knowledge or ability. A major investment of the instructor's time is required during the

grading of the subjective examination. The instructor must read individually each student's answers, sometimes twice to insure reliability. Preparing a model answer or "key" takes additional time and written comments on the papers may be required.

The subjective examination is superior in the measurement of organizational skills and communication skills. For measurement of higher learning levels (synthesis and evaluation) the subjective examination is also superior.

Two problems with subjective examinations involve content validity and scoring reliability. Content validity is achieved by stressing only the most significant instructional objectives of the course. Scoring reliability is increased by: (1) anonymity in scoring; (2) development of a prewritten model answer and a scoring scale; and (3) randomizing papers for scoring - one question should be scored through the entire set of tests, in one sitting if possible; the next question should be scored only after the papers have been reshuffled.

COMBINING EXAMINATION FORMATS

Mixed Format Tests: Some instructors recommend the combination of objective questions and essays on one examination to realize the advantages of both examination types. In such a case, the majority of the questions should be objective with essays used for higher level skills when one absolute answer is not available. The introduction of even a single essay into an hour-long examination could significantly lessen the number of objective questions which contribute to reliability.

Examination formats can vary from examination to examination, and in lecture, discussion and laboratory components of courses. Mixing formats allows the instructor to compare performances of the students when different learning levels are tested. The information obtained can be used in both assessing student performance and the evaluation of course objectives.

Students generally want to know the format or style of an examination that they will be expected to take. Probably they should know the proportion of objective and subjective items. But one might argue that disclosure of a detailed objective format would discourage students from studying at the higher levels of learning. Paradoxically, there are studies which conclude that objective examinations stimulate essentially the same study habits as essays and that student preference for the test format does not significantly affect performance.

OPEN-BOOK OR CLOSED-BOOK EXAMINATIONS?

Open-book or Closed-book Testing: Objective examinations are generally closed-book, but subjective tests lend themselves to either

the open or closed-book format. In the open-book format the students are permitted to use their texts, notes or any reference materials during the examination, and the questions thus approximate the problem-solving encountered in real-life situations. Memory for details plays a very minor role. The students are confronted with a problem requiring a solution and the only issue is whether or not they can produce the solution. The open-book examination can conveniently be a take-home examination, while the closed-book format seems more appropriate within the time constraints of an "hour-exam". The choice between open-book and closed-book in any particular examination depends upon which type is more appropriate and on what abilities are to be tested.

SMALL CLASSES PERMIT ORAL EXAMINATIONS

Oral Examinations: Special circumstances may allow use of specialized examination methods. Oral examinations, which are usually subjective in nature, are informative and reliable methods for assessing learning when class size is small enough to reasonably allow this method. Oral examinations are typically personal encounters between teacher and student; they are nonstructured and no two are ever the same. The socratic or inquiry techniques of teaching and examination are employed and every level of learning can be tested. Oral examinations serve well in advanced courses where higher levels of learning are evaluated, and are useful as make-up examinations in any course where a student misses a scheduled examination and the instructor must devise an alternative "make-up" exam. In an oral examination less material may be covered but in more depth.

PRACTICAL EXAMINATIONS FOR LABORATORY COURSES

Practical Examinations are worthwhile, especially in courses involving a laboratory where a part of the learning has been accomplished by practical hands-on experience. Practical examinations require highly standardized materials for use or observation by the students. The characteristics of any examination material used must also conform exactly with that previously experienced or examined by the students. Organization of the examination involves the instructor in the actual preparation of materials for the examination or with the responsibility of confirming that preparations are satisfactorily carried out. All examination materials and relevant equipment need to be set up in the space provided in an orderly manner. Care must be taken to ensure correct and adequate labeling of test materials. Administration of the examination needs to be very orderly and regimented so that all students are fairly or equally tested and confusion is avoided.

Administering Examinations

PREPARING STUDENTS FOR AN EXAMINATION

An instructor should establish the dates of examinations and the materials to be covered on each exam at the beginning of the course and stick to this schedule unless a generous forewarning of change can be given to the students. Before major examinations, time should be allowed to review the material that will be covered and to give students an opportunity to clear up confusion in their notes and/or minds. This can be accomplished by using a class period before an examination for review and discussion or holding a special review session under the direction of the instructor or a teaching

assistant. Some courses have accompanying discussion sections and laboratories which afford opportunity for question and in which discussion between teachers and students can take place on a routine basis. Review questions or sample questions and examinations from previous courses can be provided for students or posted or placed on reserve in the libraries. A few days prior to an examination, it is a good idea for the instructor to adhere closely to office hours or even to expand them in order to accomodate individual students and problems.

THE DAY OF AN EXAMINATION

On the day of an examination, the instructor should be at the examination site a little early to organize the room and to instruct the students about the administration of the test. Almost all the students will arrive on time and will be anxious to begin the test at the scheduled time. The room should be clear, well-lighted and free from distracting signs or noises. Whenever possible, the students should be seated in every other seat and in straight rows running the length of the room. If there are over fifty students taking the examination an instructor may need assistance to help administer and monitor the examination. It is best to have assistants who understand the examination and the course material to help answer students' individual questions concerning procedure, contents or interpretation of the examination.

ADMINISTRATION OF A WRITTEN EXAMINATION

The examination should be begun on time. After the tests are passed out, the instructor should call for the students' attention and tell them the rules of the examination and any special instructions concerning the examination. If the test is limited by time, students should be advised periodically of the time remaining

on the examination. If the instructor chooses to answer questions from students (especially individual questions) concerning the meaning or interpretation of test questions, care must be taken to not disclose a portion of the answer in responding.

CHEATING ON EXAMINATIONS

Cheating on examinations, especially in large introductory courses, can be problematic and the instructor should take positive steps to prevent it and be prepared to take action if it occurs. The problems associated with cheating on examinations and other forms of academic dishonesty, as well as possible approaches for creating an environment in the classroom to enhance academic honesty, are discussed in GUIDELINES FOR ADVISORS OF UNDERGRADUATES which is available from CALS Office of Academic Student Affairs (116 Agriculture Hall). The University procedures for handling situations of suspected academic misconduct are put forth in Chapter 17 of the U.W. SYSTEM ADMINISTRATIVE CODE, "University of Wisconsin-Madison Student Disciplinary Guidelines". This document, although difficult to read and interpret, should be consulted before taking a disciplinary action in any case of suspected academic dishonesty.

Grading Examinations

EVALUATING STUDENT EXAMINATIONS

A model answer for each question should be firmly established by the instructor before grading occurs. On subjective examinations, factors such as penmanship, prose style, and similarity of student thought processes to the scorer's can be seductive and care must be taken to avoid possible bias in scoring. Objective examinations are largely free of such biasing factors. They can be graded rapidly, sometimes by computer, and if properly composed, subjected to

meaningful statistical analysis. But they generally do not test the higher levels of learning. Regardless of whether an examination is subjective, objective, or a mixture, grading must be done consistently and fairly.

CONSISTENCY IN GRADING

The following points aid in consistency: (1) A predetermined point value for each question and major section of the exam. (2) Thoroughness and completeness in grading, not missing any points or concepts for each question. Whenever possible, a key part of the correct answer should be written on the student's examination to explain the grading rationale. (3) Some predetermined standard for a reasonable and fair distribution of grades among students. This will depend on the objectives of the course, the level of the course, the background and intellectual capabilities of the students, the number of students, and a host of other factors. (4) Determination at the beginning of the course of the make-up of the final course grade and a standard to be used in translating numerical grades into letter grades. The students should be advised of these final course grade components at the beginning of the course.

FAIRNESS IN GRADING

While fairness in grading depends to a large extent on consistency, it also may be influenced by other factors such as the following: (1) Student anonymity is important in scoring because instructors may be strongly influenced by external factors such as attitudes, appearances, and peculiarities of students, as well as by previous test performance. Asking students to write their names only on the back of examinations preserves anonymity to some extent, but characteristic colored inks and handwriting can, unfortunately, become quite recognizable as the semester progresses. (2)

Intragrader variability can result in variations in paper scores over time with the greatest variation usually between the first and last paper scored. This source of variability can be checked or compensated for by multiple scorings and/or by grading exams a single question at a time, then shuffling the exams between questions. (3) Intergrader variability can occur easily if more than one grader is scoring. It can be minimized by using the same grader(s) for each question or set of questions.

EXAMINATION EFFECTIVENESS

In evaluating the effectiveness of a test or examination an instructor should determine if a large portion of students, say a third, have missed any particular question. Such results may mean that the question was unclear or ambiguous or that the material was not covered well in class. If two-thirds or more of the students missed a question, the instructor might wonder if the material was covered at all or if possible misscoring (especially on an objective test) has occurred.

Ultimately the scores students make on examinations translate into their grades in the course and, like it or not, these grades become a final measure by which we fill the niches of the work and professional worlds with our students. This thought should be kept in mind when composing and evaluating examinations. Examinations and their grading should reflect no biases nor measure students by any criteria other than their performance in the course.

Returning Examinations

POST-EXAMINATION PROCEDURES

After the examination has been completed and graded, the instructor should go over the correct answers or provide an answer

key for the students. This allows the exam to be used as a teaching tool or learning aid and helps the students see their learning strengths and weaknesses. Some students may wish to challenge the grading, defend a response, or understand their error after an examination. The instructor must find a way to accommodate them. The procedure for student appeals or grievances which apply to CALS can be found in the College Bulletin. Instructors are advised to retain final examinations, term papers, etc. for at least a semester in case a final course grade is contested (see the CALS GUIDELINES FOR ADVISORS OF UNDERGRADUATES for such recommendations).

There are conflicting opinions among instructors regarding the merits of returning examinations to students and posting answer keys. Returning exams to students in large, regularly-taught classes builds up a large amount of "old" examination information in the study domain of the student. Over a period of years the instructor tends to deplete the supply of original examination material, especially if the course material is not changing rapidly. However, returning examinations has merit in that the availability of old examinations as teaching aids may outweigh their liability in exhausting original exam material. If examinations are not returned after scoring, the students must be allowed to inspect their papers and the scoring and to compare their responses to the key. Otherwise the teaching value of the exam is diminished greatly.

POSTING AN EXAMINATION KEY

Except in small advanced classes a written key to the exam should be available to students, or at least there should be some easy mechanism to allow students to get the correct answers to examination questions. The timing for posting a key is a point of

question. While prompt posting after an examination would seem most reasonable, it can be argued that a lag time in posting the key stimulates students to discuss or seek out answers to questions and calls upon them to utilize higher learning processes than those employed in simply reading a posted model answer.

STUDENT RANK OR LETTER GRADES

The score a student makes on an examination should allow him to determine the absolute value of his work (A, B, C, etc.) as well as the frequency and relative position of his grade among those of his colleagues. If grades are posted, this statistical information can be provided at the same place and time. Alternatively, an instructor may present such information during the class period in which examinations are returned.

PRIVACY OF STUDENT SCORES ON EXAMINATIONS

There are practical problems associated with returning examinations. Privacy of student records must be respected at all times. Thus, returning examinations to students must be done in a fashion which does not allow students to have access to the examinations of one another. The individual scores of students in association with their names must not be disclosed or displayed publicly. To maintain privacy, grades can be posted in association with student I.D. numbers.

Make-up Examinations

POLICY FOR MAKE-UP EXAMINATIONS

Whether or not an instructor has a policy on make-up exams, it is almost certain that a situation will arise in which a student misses an examination, leaving a gap where the instructor needs a grade. It helps to have a defined policy for make-ups such as giving separate exams, early or late exams, oral exams, counting three of

four examinations (dropping a grade), counting the next exam or final exam double, substituting additional work (term paper, special project, etc.).

Term Papers

TERM PAPERS AS "EXAMINATIONS"

In addition to establishing ground rules regarding examinations, grading, and policies on excuses for absences, etc., an instructor should establish a policy regarding term paper requirements. The University of Wisconsin-Madison "Student Disciplinary Guidelines" prohibit "plagiarizing, including the submission of others' ideas or papers (whether purchased, borrowed, or otherwise obtained) as one's own..." In chapter 128.02 of the UW "Administrative Code," an offer to prepare or purchase material which is to be submitted by the purchaser as an original product for academic credit is forbidden. However, students are not prevented from requesting tutorial assistance, research material, etc. from other persons for use in preparing a term paper. Similarly, typing, research, assembling, transcription, and editing of a term paper may be hired out by a student. No where does the code address the question: may a term paper prepared for another course be submitted in order to fulfill requirements for a second course? Presumably, the instructor must determine whether or not this practice is acceptable and so inform the students at the onset of the course.

COURSE EVALUATION

An important aspect of instructional improvement is student and/or peer evaluation of courses and instructors. The objective of this portion of the Instructional Improvement Handbook is to discuss the purposes and types of course/instructor evaluations.

On October 4, 1974 the Board of Regents of the University of Wisconsin System adopted a policy paper on "Student Evaluation of Instruction". In essence this paper stated that:

UW POLICY ON EVALUATIONS

1) Each institution should adopt a policy supporting the use of student evaluations for improvement of instruction.
2) Each institution should adopt such policies as would insure:
   a) that student evaluations are considered for promotion or tenure of faculty members.
   b) that a summary of teaching effectiveness be included by the faculty body initiating a recommendation for promotion or tenure (A copy of the current appropriate GUIDELINES FOR RECOMMENDATIONS FOR PROMOTION OR APPOINTMENT TO TENURE RANK can be obtained from Departmental Offices or from the Office of Associate Dean and Director, G. W. Sledge, Academic Affairs).
3) Each institution also should develop systematic procedures for the manner and form of presenting student evaluation material for administrative purposes and that faculty members be infomed of and have the right to respond to any summaries of student evaluations to be submitted for administrative use.

4) Faculty members considered for merit salary increases should be evaluated by peers as to their instructional ability, using information from student evaluation of their instruction, as well as other information relevant to assessment, at least once every three years.

Simple compliance to the Regents' mandate would not necessarily result in improved quality of education. Evaluation of the course and/or insturctor is only one step in the total process. Faculty involved in teaching should be encouraged to continually upgrade their courses and programs, and they should be provided with the incentives and capabilities to do so.

Purposes of Course Evaluation

WHY EVALUATE A COURSE?

The major reasons for evaluating courses and instructors are (1) to improve the instructor's ability to communicate; (2) to improve the quality of instruction through course improvement; (3) to assist administrators in making decisions involving teaching; and (4) to help students in selecting courses.

More specifically, feedback from students is helpful in determining minor areas for possible self-improvement of instructors. For example, through course evaluations, students may identify instructor mannerisms that detract from effective delivery of lectures. Evaluations may further assist instructors in improving courses by modifying the objectives, content, delivery system, or grading procedures. Similarly, evaluations may enable departments within CALS to make decisions regarding addition, deletion, or combination of courses. Course evaluations may also be used to make administrative decisions

such as salary increases, promotion, appointment to special responsibilities in instruction (committees, task forces, administrative positions), and selection for teaching awards. If course evaluations from successive years are kept on file, students may review them for information on course content and suitability for their personal degree programs.

Types of Course Evaluations

There are two major types of course/instructor evaluations: (1) student evaluations and (2) peer reviews. Because student evaluations are most commonly used in CALS, this type of evaluation will be discussed in more detail.

EVALUATIONS BY STUDENTS

Student Course Evaluation: There are several advantages to the student type of evaluation. Student evaluations provide information directly from the "consumer". Having attended the lectures, read the assignments, taken the exams, participated in laboratories and field trips, etc., students are more able to evaluate a course than an occasional visitor. Moreover, because they are taking other courses, students have a good base of comparison. Another benefit of the student questionnaire is that it allows instructors to compare their performance with that of instructors in other courses or with their own performance during past semesters in the same course. Student questionnaires may allow comparisons among instructors both within and across departments.

The exclusive use of student questionnaire evaluations has disadvantages. The anonymous aspect of such a survey largely

eliminates the possibility of dialogue. However, open-ended questions which allow for interpretive statements can help overcome this limitation. A second problem with student questionnaires is lack of specificity. Because of the general nature of many questionnaires, specific issues about texts, exams, personal mannerisms, etc. may not be addressed. In order to offset this limitation, some instructors include a supplementary sheet to the questionnaire requesting specific information regarding their course.

POTENTIAL PROBLEMS WITH STUDENT EVALUATIONS

A major problem with student questionnaires is that students may be unable to evaluate certain aspects of the course. Because they lack experience in the discipline, students in elementary courses may be unable to judge how well the subject matter was covered. However, students can be good judges of the degree of course organization and the ability of the instructor to clearly communicate subject matter.

A final problem with student evaluations concerns reliability, validity, and comparability of questionnaires. Many course evaluations used in CALS have not been tested for reliability. For example, if students were given the same form twice, would they produce comparable results? It should be remembered that students' grades, class distribution, style of the instructor, timing of the evaluation, etc. may influence the response to specific aspects of an evaluation questionnaire. Some testing of validity would determine if the ratings are biased in one direction or another. Such statistical considerations are necessary before results of CALS student questionnaires can be reasonably compared among instructors or courses.

A list of items frequently included in student questionnaire evaluations is given in Table 1. Several examples of student course evaluations currently in use in CALS, University of Wisconsin-Madison are given in Appendix V.

Table 1. ITEMS COMMONLY APPEARING ON STUDENT QUESTIONNAIRE EVALUATIONS

Content - assumption of prior knowledge, repetition of other courses.

Examinations - type, fairness, relevance to course material, how soon they are returned following grading, etc..

Instructor - knowledge, preparation, speaking ability, responsiveness to questions, enthusiasm, accessibility, pace, ability to explain, ability to challenge the student, etc..

Textbook appropriate as a learning aid.

Readings relevant to course objectives.

Necessity of a term paper.

Visual aids - utilized effectively to enhance learning.

Difficulty of workload in relation to credits.

Comparison to other classes.

Recommendation that other students take the course.

Specific questions about the particular course.

Other comments - how might the course be improved or how might the instructor improve?

EVALUATIONS BY PEERS

Peer Review: A second type of course/instructor evaluation is peer review. Conducted by colleagues from within the department, peer reviews offer several advantages, including a professional review of the course material, readings, and syllabus. Peer review also offers a more rapid feedback than student evaluations, enabling instructors to revise and improve courses during the term. Results of peer reviews enable faculty members to familiarize themselves with the content of other courses, which can help in coordinating curricula. In addition, such reviews provide potential for improving the reviewer's own teaching by learning what techniques others are using.

However, there are some disadvantages to peer review. It is difficult to develop a fair mechanism to choose the reviewers. In some departments the chairperson makes such choices, while in other departments the faculty members choose. Peer review also offers only limited exposure to an instructor's performance, since colleagues generally don't sit in on every class, or interview all students. Such an effort would be extremely costly in terms of faculty time. A more efficient but indirect and less comprehensive approach of peer review is to use the faculty advisors. They are in contact with a large number of students who have taken a variety of CALS courses. By interviewing the students about instruction and preparing summary reports, faculty advisors can contribute to evaluating courses. The difficulties with this approach are that it is not comprehensive, and it is based largely on secondhand information.

Timing and Administration of Evaluations

WHEN TO EVALUATE?

Student or peer evaluations of courses may be given at any time but are commonly administered (1) at the midpoint, (2) at the end, or (3) at the midpoint AND at the end of the course. A review or evaluation at the midpoint of the course enables the instructor to improve the last half of the course. But given alone and without follow-up, it cannot measure improvement in instruction. Evaluations given at both the midpoint and end of the course are more time consuming but allow instructors to measure their improvement over a semester in instructing the same group of students.

Interpretation of Evaluations

INTERPRETING COURSE EVALUATIONS

The nature of the evaluation form (see Appendix V) dictates how the results may be analyzed: (1) quantitatively, i.e. questionnaires calling for rating responses of A through F or 1 through 5; (2) semi-quantitatively, i.e. questionnaires which ask students to indicate their degree of agreement or disagreement; or (3) qualitatively, i.e. by listing selected, representative comments from an essay type of course/instructor evaluation.

A quantitative evaluation is useful for comparing an instructor's performance to that of others teaching the same course or a course of the same level of difficulty. Quantitative evaluation is also useful for showing change in quality of instruction by one individual through time. One disadvantage of quantitative evaluation is that all questions typically carry an equal weight. Therefore, if

an overall evaluation score is computed, it reflects the type of questions as well as quality of instruction. It is important to distinguish between questions pertaining to details of the course, e.g. suitability of the textbook, and those questions addressing the quality of the instructor's organization and communication skills.

An evaluation based on degree of agreement or disagreement is advantageous in that it does not require a student to quantify what might best be considered a qualitative judgment. However, the disadvantage of this style of evaluation is that questions may be worded so that they suggest or force a positive (or negative) response.

A list of items frequently included in student questionnaire evaluations is given in Table 1. Several examples of student course evaluations currently in use in CALS, University of Wisconsin-Madison are given in Appendix V.

APPENDIX I

INFORMATION ON RESOURCES FOR INSTRUCTIONAL IMPROVEMENT

There are several resources available for course and instructor improvement on a Madison campus-wide basis. Many can be found in the College of Agricultural and Life Sciences. A good place to start is with the Department of Agricultural Journalism, which handles the information services for the college and operates the fast copy center.

Agricultural Journalism assists with the planning and production of a variety of teaching aids and helps college staff members develop their own production skills. If you'd like help with still visuals such as slides, overhead projections, charts, graphs, posters, and cardboard displays, contact Claron Burnett at 2-1674 or Duane Brickson at 2-0883. The department also maintains a photo and slide file from which you can borrow for duplication or for use in publications or displays.

If you need assistance in recording or editing audio tapes, call Larry Meiller at 2-1462. Contact Fritz Albert, 2-1506, if you feel a short instructional 16mm film would be helpful in your teaching situation.

Handouts, workbooks, and similar materials may be duplicated on or off-campus in compliance with copyright laws. Since off-campus duplication requires special financial arrangements, most materials should be sent to the fast copy center in Hiram Smith Hall. For help with the production of workbooks and manuals, contact Bob Manson at 103 Hiram Smith Hall, 2-1241. If you want the Agricultural Bulletin Mailing Room to handle sale and distribution of workbooks and manuals to your students, talk with Harold King at 2-2655.

If you need inexpensive color enlargements or overhead projections made from materials printed in full color or from 2" x 2" color slides, they can be produced on a Xerox color copier. The most convenient copier is located in the Humanities Copy Center, 1650 Humanities Building. Call 3-1803 for prices and details.

When you need color slides in a hurry, shoot with Ektachrome film and leave the exposed film at the Photographic Media Center, 45 N. Charter St. by 1:30 p.m. Slides will be ready by 11:00 a.m. the next day. The Photographic Media Center (Photo Lab) can superimpose titles or captions on slides, make ozalid slides of your charts, tables, or graphs, or duplicate slides. Other services include film processing and printing; photographing maps, charts, drawings, or other visual materials; and producing movies and slide-tape presentations. For rates or estimates, call 2-2944.

The Bureau of Audio Visual Instruction (BAVI) now operates as a film library (19,000 prints) with rental equipment and repair services. The BAVI will purchase films or help you locate titles not available on campus. The bureau no longer develops or produces instructional materials. However, personnel are available for consultation about instructional methods, media utilization, instruction evaluation, and equipment selection. For assistance, call Lee Sobania or Steve Stuelke at 2-1644.

There are two facilities on campus to help with diagnostic testing and development of examinations. The Madison Academic Computing Center (MACC) will assist in development of rapid feedback diagnostic tests related to concept understanding or assist in quiz and examination grading. Further information may be obtained by calling 2-3771. For additional assistance in

developing and correcting examinations, contact the Office of Testing and Evaluation Services, Room 338 Educational Sciences Building. Call Char Tortorice at 2-5863 or 2-0677.

Audio visual materials such as slide-tapes or video tapes for any course may be placed in the Audio-Visual Center of Steenbock Library. Materials, demonstration aids, periodicals, field trip collections, and similar materials will be cataloged and placed on reserve. For further information, contact Linda Rossi at 3-3899. The Steenbock staff also conducts orientation sessions for classes that will be using the A-V room or other library references.

Funding for required field trips may be available, with adequate advance notice, through the Office of Academic Student Affairs. Requests should be submitted through your department chairperson to be forwarded to Associate Dean and Director George W. Sledge. For small groups, a bus (or 2-10 passenger vans) owned by the college is available on a reservation basis. For scheduling or information, contact Orrin Rongstadt at 3-6271 or 2-2671.

If interested in seeing your performance as the students see you, portable TV cameras are available within the college for video taping lectures and classroom presentations. For assistance in arranging for video taping, contact David Wieckert at 3-3483. Video taping with replay, for purposes of self evaluation or peer evaluation, can help eliminate annoying mannerisms and improve organization of content.

Financial support for some course improvement projects is available through the UW System. Approximately $180,000 is available for Undergraduate Teaching Improvement Grants each year. All departments get notification of the grants and deadlines. Contact your department chairperson or Blair

Mathews at 3-5700. A book of abstracts of previously funded grants is available in Room 116 Agricultural Hall. Ask for Enhancement of Undergraduate Teaching: Proposals and Results.

Sabbatical leaves are available on a limited (fifteen for all UW faculty members) and competitive basis. All faculty members get notification of these. Applications should be submitted to the departmental chairperson by September 15 for review and forwarding to the Dean's office by October 1. For additional information, contact your chairperson or Mary Ann Yodelis Smith at 3-6856.

APPENDIX II

COURSE REVISIONS REQUIRING CURRICULUM COMMITTEE ACTION

While an instructor may make many decisions and changes concerning course objectives, course content, order of presentation of topics, method(s) of instruction, etc., there are several types of changes that lie outside the jurisdiction of the individual faculty member. All of the following course revisions require the submission of formal requests on the appropriate form(s) (generally available in Departmental Offices) and a sequence of approvals before they can be implemented.

1) Revise catalog description.
2) Revise course prerequisites.
3) Cross list course.
4) Discontinue course.
5) Revise credits.
6) Change course number.
7) Change course title.
8) Create new course.

The general sequence of events for any of the above proposed course revisions includes:

1) The proposing faculty member or departmental curriculum committee seeks approval for the proposed action from the departmental faculty and chairperson.
2) Assuming approval, 40 copies of the proposal and the chairperson's letter of transmittal are sent to the College Curriculum Committee.

3) Again assuming approval, the proposals are routed to the appropriate Divisional Committee (or by them to the Interdivisional Conference Committee, if necessary) for approval and to the Academic Planning Office for information. The four All University Faculty Divisional Committees include Physical Sciences, Biological Sciences, Humanities and Social Studies. The latter three Divisional Committees use the same course proposal forms, but Physical Sciences has its own, different forms. Samples of the appropriate forms and further detailed information on procedures and items requiring (and those not requiring) Curriculum Committee action can be found in the current Curriculum Committee: Organization, Function, Procedures booklet. This booklet should be available in most department offices. If unable to obtain a copy, instructors may contact Associate Dean and Director G. W. Sledge, Academic Affairs (262-3003).

4) If approved or recommended for approval, the proposal is routed to the Dean of CALS for approval and implementation.

APPENDIX III

EXAMPLE OF A STUDENT BACKGROUND QUESTIONNAIRE

PLANT PATHOLOGY 300: INTRODUCTION TO PLANT PATHOLOGY

Please fill out the following form.

1. Name: _____

2. Local address: _____

3. Telephone No.: _____

4. College and Year: _____

5. Major Field: _____ Advisor: _____

6. Expected occupation after graduation: _____

7. Crops or plants in which you have a particular interest:

   Vegetables _____ Field crops _____ Turf _____

   Ornamentals _____ Fruits _____ Shade and forest

   tree _____ Other _____

8. Have you lived and/or worked on a farm?: _____

9. If so, when and for how long?: _____

10. Have you had the following Botany courses?: General _____

    Morphology _____ Taxonomy _____ Mycology _____

    Physiology _____ Ecology _____

11. Have you had courses in the following subjects?:

    Agronomy _____ Bacteriology _____ Biochemistry _____

    Entomology _____ Horticulture _____ Genetics _____

    Soils _____

12. Do you expect to do graduate work?: _____

    If so, in what field?: _____

APPENDIX IV

CONDENSATION OF UW-MADISON'S POLICY ON SEXUAL HARASSMENT

The University of Wisconsin-Madison has recently adopted a policy concerning sexual harassment, within and without the instructional environment, by establishing a set of definitions and rules of conduct subject to disciplinary action. Briefly, these rules prohibit:

I. Sexual Favors as a Basis for Actions Affecting an Individual's Welfare as a Student or Employee;

II. Flagrant or Repeated Sexual Advances, Requests for Sexual Favors, and Physical Contacts Harmful to Another's Work or Study Performance or to the Work or Study Environment.

III. Repeated Demeaning Verbal and Other Expressive Behavior in Non-instructional Settings that is Harmful to Another's Work or Study Performance or to the Work or Study Environment.

IV. Demeaning Verbal and Other Expressive Behavior in Instructional Settings.

Rule IV is most germane to instructional situations. The rule is intended to be consistent with the principles of academic freedom and should be interpreted and applied accordingly. However, expressive behavior by an instructor in an instructional setting may be subject to discipline if:

(a) the behavior is commonly considered by persons of a particular sex or sexual preference and of average sensibilities to be demeaning to members of that group, and

(b) the person engaging in such conduct has previously been asked not to engage in such conduct or conduct of substantially the same kind, and

(c) the conduct either

(i) seriously interferes with the academic work of a student(s) in the course, or

(ii) makes the instructional setting hostile or intimidating, or demeaning to students of a particular sex or sexual preference and of average sensibilities.

In addition, a staff member is subject to discipline if, in addressing a student(s) in an instructional setting, he or she repeatedly uses sexual gestures, sexually explicit comments, or gender-related epithets to refer to a student(s) in the course, and if the gestures, comments, or epithets

(a) are commonly considered by people of a specific sex or sexual preference to be demeaning to that sex or sexual preference, and

(b) repetition of such conduct either

(i) seriously interferes with the learning or other academic performance of the student(s) to whom the staff member referred, or

(ii) makes the instructional setting hostile or intimidating, or demeaning to persons of average sensibilities of that sex or sexual preference.

For further information one should consult the full version of this policy, SEXUAL HARASSMENT: DEFINITIONS AND RULES GOVERNING THE CONDUCT OF UW-MADISON FACULTY (Faculty Document 458, 2 November 1981), or contact Diane Rausch in the Office of Affirmative Action and Compliance (263-2378).

APPENDIX V

EXAMPLES OF COURSE/INSTRUCTOR EVALUATION QUESTIONNAIRES USED IN CALS, UW-MADISON

The following pages present a sample of the different types of Course Evaluation Questionnaires currently being used to evaluate instruction in CALS. In departments where courses often include laboratories and/or discussion groups, questionnaires may include additional sections for evaluation of this aspect(s) of a course.

Alternatively, in some cases, completely separate questionnaires to evaluate laboratory teaching are used.

DEPARTMENT OF SOIL SCIENCE DATE_____

Instructor:_____

Course: Soil Sci._____, Lec._____

Please do not write your name on this evaluation sheet. All ratings, comments and suggestions will be taken seriously in future personnel decisions and in course planning.

SCALE: A = Excellent; B = Good; C = Fair; D = Poor. Intermediate grades are acceptable. 0 = Does not apply.

How would you rate_____ in regard to:

1. His knowledge of the subject? _____
   Comments:

2. His ability to teach the course: i.e., his ability to present a well-organized, relevant lecture in a clear and understandable manner? _____
   Comments:

3. His commitment to teaching the course: i.e., his willingness to answer questions; the effort he puts into teaching the course? _____
   Comments:

4. His success in stimulating you to think and develop an interest in learning more about the subject? _____
   Comments:

5. The relevance and fairness of the examinations? _____
   Comments:

6. If you were to recommend this course to another student, what overall rating would you give? _____
   Comments:

PLEASE TURN OVER

DEPARTMENT OF SOIL SCIENCE EVALUATION FORM (continued)

SUPPLEMENTARY SUGGESTIONS FOR COURSE IMPROVEMENT

Please use this page for amplification of any of the comments made on the other side of the page and for any additional comments you may have concerning improvement of the course. Use the same rating system as before if you wish. In particular, Professor _____ would appreciate comments on the following questions:

THANK YOU VERY MUCH

COURSE EVALUATION

Agricultural Engineering Department

Course: _____ Date: _____ Instructor: _____

CHECK APPROPRIATE BOX

Year of University study:

☐ Freshman ☐ Sophomore

☐ Junior ☐ Senior

☐ Graduate Student

Primary reason for taking course:

☐ Requirement ☐ Interest in subject

☐ Recommended by Advisor

☐ Recommended by other students

L E C T U R E

Please give us your ratings of the instructor in charge for the items listed below using the following scale: 1-Very Good 2-Good 3-Adequate 4-Poor 5-Very Poor

	1	2	3	4	5
1. Preparation and organization of instructor					
2. Clarity of presentation of material					
3. Ability to answer in-class questions					
4. Enthusiasm about material					
5. Ability to stimulate student interest in subject					
6. Accessibility out of classroom					
7. Pace of instruction					
8. Overall rating of instructor					
Please give us your ratings of the class as a whole:	1	2	3	4	5
9. Organization of class as a whole					
10. Relevance of homework to lecture					
11. Workload in relation to number of credits					
12. Relevance of exams to lecture					
13. Fairness of exams					
14. Relevance of exams to reading materials					
15. Value of textbooks and outside readings					
16. Value of discussion sections (if applicable)					
17. In comparison to other classes you have taken on this campus, rate this class					

How might the course be improved?

Comments and/or suggestions.

ALPHA ZETA COURSE EVALUATION

The information given will not be available to the professor until after grades are issued.

Course_____ Professor_____ Date_____

Your Classification_____ Major_____

Why you took course:

_____ Required
_____ Recommended by advisor
_____ Recommended by friend
_____ Professor
_____ Enjoy subject matter
_____ Other, explain: _____

Percent attended: _____ Lectures _____ Labs _____ Discussions

If any are below 75%, why? _____

Answer each question by circling the appropriate number:

1 = strongly agree
2 = slightly agree
3 = slightly disagree
4 = strongly disagree
5 = not applicable

LECTURE

1. Professor understands subject matter and is generally prepared.	1	2	3	4	5
COMMENTS:					
2. Professor uses audio-visuals effectively (blackboard, slides, etc.)	1	2	3	4	5
COMMENTS:					
3. Lectures are easy to follow.	1	2	3	4	5
COMMENTS:					
4. Professor answers questions effectively.	1	2	3	4	5
COMMENTS:					
5. Assigned readings from textbooks and handouts are effective.	1	2	3	4	5
COMMENTS:					
6. Exams test your knowledge and are fair.	1	2	3	4	5
COMMENTS:					
7. The lectures stimulate your interest.	1	2	3	4	5
COMMENTS:					
8. The professor comprehends whether or not the students are learning the material.	1	2	3	4	5
COMMENTS:					
9. This course requires more work than other courses with the same number of credits.	1	2	3	4	5
COMMENTS:					
10. The professor seems to enjoy teaching.	1	2	3	4	5
COMMENTS:					

ALPHA ZETA COURSE EVALUATION (continued)

FOR COURSES WITH LABORATORY

1. Material covered in lab is related to lectures. 1 2 3 4 5
COMMENTS:

2. Enough time was allowd to finish lab. 1 2 3 4 5
COMMENTS;

3. Material covered in lab was useful. 1 2 3 4 5
COMMENTS:

FOR CIASSES WITH TA'S

1. TA comes to class prepared. 1 2 3 4 5
COMMENTS:

2. TA knows material. 1 2 3 4 5
COMMENTS:

3. TA was helpful in understanding course material. 1 2 3 4 5
COMMENTS:

4. TA is available outside of class. 1 2 3 4 5
COMMENTS:

Write anything you feel would be helpful to improve the course and course material.

State anything you feel the professor could change to improve his lectures or should keep the same.

Would you recommend this course to a friend? _____ Yes _____ No

ANY ADDITIONAL COMMENTS:

Department of Biochemistry

LECTURE/DISCUSSION EVALUATION

Indicate the strength of your agreement or disagreement with the statements below by placing a check mark in the appropriate column. In all cases the "instructor" is the person whose name is on the first sheet of this questionnaire. Use the following scale:

(0) Inappropriate or don't know, (1) Disagree strongly, (2) Disagree, (3) Both agree and disagree (4) Agree, (5) Agree strongly

	0	1	2	3	4	5
1. The instructor develops subject matter in a logical manner throughout course.....						
2. Individual lectures or discussions are well organized.....						
3. The instructor incorporates up-to-date information in his lectures or discussions.....						
4. The instructor recognizes the range of interests and competence in the class and supplies an effective range of challenges.....						
5. The pace of the course is (about right) (too fast) (too slow) [cross out 2 of the preceding].....						
6. The instructor gives clear explanations of complex material.....						
7. The instructor makes the course interesting.....						
8. The instructor encourages and stimulates student thinking.....						
9. The instructor is willing to answer questions in class that are appropriate to the subject matter (answer only for small classes)						
10. The instructor welcomes differences of opinion when several interpretations of subject matter are possible.....						
11. The instructor is available during office hours.....						
12. Consultation with the instructor is helpful.....						
13. The instructor speaks clearly.....						
14. The instructor speaks with sufficient volume.....						
15. The instructor writes legibly on the blackboard.....						
16. The instructor uses audio-visual aids well.....						
17. The exams stress the important points of the lecture or text.....						
18. The exams are graded fairly.....						
19. The exams are returned quickly enough for the student to benefit from corrections.....						
20. The reading assignments and problems contribute substantially to the student's understanding of the course material.....						
21. You would like to take another course from this same instructor...						
22. You would rank the instructor as excellent on overall teaching ability in comparison with all other instructors you have had on this campus.....						

(On the back of this sheet include any additional comments you care to make about the instructor, his personality, his handling of students, etc., or about the course itself.)

Department of Bacteriology

Year _____
Semester _____

STUDENT EVALUATION OF _____

Your cooperation is very much appreciated.

Do not sign your name.

These forms will be collected and not examined until after final grades have been submitted.

What do you consider to be the strong points of the course and the instructor?

What do you consider to be the weak points of the course and the instructor?

NOTE: Instructors may attach additional questions as desired.

To remain useful to instructors, the handbook must be kept fairly current. Thus, sometime in the future, another Handbook Committee will probably be updating this first effort.

If you have any comments/criticisms concerning this handbook or suggestions of information or subjects that should be added to subsequent handbooks, please fill out the form below and return it to:

Office of G. W. Sledge
Associate Dean and Director
Academic Student Affairs
116 Agriculture Hall

(detach)

COMMENTS/CRITICISMS concerning CALS Instructional Improvement Handbook:

SUGGESTIONS for incorporation in a future handbook:

Date_____

REFERENCES SUGGESTED FOR FURTHER READING

Apps, J. W., 1981. The Adult Learner on Campus. Follett Pub. Co., Chicago.

Bernstein, H. R., 1976. Manual for Teaching. The Center for Improvement of Undergraduate Education, Cornell University, New York.

Note: Center for Improvement of Undergraduate Education was discontinued in 1975. Send inquiries to Provost's Office, Day Hall, Cornell University, Ithaca, N.Y. 14853.

Bloom, B. S., ed. 1956. Taxonomy of Educational Objectives. Handbook I: Cognitive Domain. David McKay Co., Inc., New York.

Eble, K. E. 1979. The Craft of Teaching. Jossey-Bass Pub., San Francisco.

_____ 1980. New Directions for Teaching and Learning: Improving Teaching Styles. Jossey-Bass Pub., San Francisco.

Highet, G. 1976. The Immortal Profession: The Joys of Teaching and Learning. Weybright and Talley, New York.

Hoover, K. H. 1980. College Teaching Today: A Handbook for Postsecondary Instruction. Longwood Division, Allyn and Bacon, Inc., Rockleigh, N.J.

Kemp, J. E. 1980. Planning and Producing Audiovisual Materials. Harper & Row, New York (fourth edition).

Mager, R. F. 1975. Preparing Instructional Objectives. Fearon-Pittmann Pub., Belmont, California (second edition).

McKeachie, W. J. 1978. Teaching Tips: A Guidebook for the Beginning College Teacher. D. C. Heath & Co., Lexington, Massachusetts (seventh edition).

Milton, O., 1978. On College Teaching. Jossey-Bass Pub., San Francisco.